

CLAIMS:

1. A water craft including a chassis portion, at least four water engaging means and interconnection means,  
5 each water engaging means being connected to the chassis portion and being moveable in a substantially vertical direction relative to the chassis portion, and the interconnection means being arranged to functionally link the at least four water engaging means such that during use the chassis portion is encouraged to maintain an orientation which is substantially constant relative to the average plane of the water  
10 surface, even when the water surface is undulating and the water engaging means are not all disposed in the same plane,  
wherein the interconnection means includes a plurality of rams and a plurality of fluid conduits, each ram being associated with a water engaging means and each ram being fluidly connected to at least one other ram associated with at least one other water  
15 engaging means using at least one fluid conduit.
2. A water craft as claimed in claim 1, wherein the interconnection means is arranged to functionally link the water engaging means such that, for any loading condition, the static load on each water engaging means remains substantially constant  
20 even when the water engaging means are not all disposed in the same plane.
3. A water craft as claimed in claim 1, wherein the interconnection means is arranged to functionally link the water engaging means such that statically the proportion of weight borne by a first pair of oppositely located water engaging means  
25 relative to the weight borne by a second pair of oppositely located water engaging means is substantially constant.
4. A water craft as claimed in claim 3, wherein the interconnection means is arranged to functionally link the water engaging means such that when one of the water  
30 engaging means is urged during use to move in a generally upward vertical direction relative to the chassis portion, two adjacent water engaging means are urged to move in a generally downward vertical direction relative to the chassis portion.

5. A water craft as claimed in claim 1, wherein the water engaging means are disposed in a diamond shaped configuration relative to the chassis portion when viewed in plan.

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6. A water craft as claimed in claim 5, wherein the interconnection means is arranged to functionally link the water engaging means such that when two adjacent water engaging means are urged during use to move in the same generally upward vertical direction relative to the chassis portion, an opposite two adjacent water  
10 engaging means are restricted from moving in a generally downward vertical direction relative to the chassis portion.

7. A water craft as claimed in claim 1, wherein the water engaging means are disposed in a rectangular shaped configuration relative to the chassis portion when  
15 viewed in plan.

8. A water craft as claimed in claim 7, wherein the interconnection means is arranged to functionally link the water engaging means such that when two adjacent water engaging means disposed on a first lateral side of the water craft are urged during  
20 use to move in a generally upward vertical direction relative to the chassis portion, two adjacent water engaging means disposed on a second opposite lateral side of the water craft are restricted from moving in a generally downward vertical direction relative to the chassis portion.

9. A water craft as claimed in claim 8, wherein two adjacent water engaging means disposed on the first lateral side are functionally linked to a transversely oppositely  
25 located two adjacent water engaging means disposed on the second lateral side.

10. A water craft as claimed in claim 8, wherein two adjacent water engaging means  
30 disposed on the first lateral side are functionally linked to a diagonally oppositely located two adjacent water engaging means disposed on the second lateral side.

11. A water craft as claimed in claim 1, wherein at least two water engaging means are each associated with two rams, each ram being fluidly connected to at least one other ram associated with at least one other water engaging means.

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12. A water craft as claimed in claim 1, wherein the rams and fluid conduits define a plurality of discrete fluid circuits, at least some of the fluid circuits including a first fluid circuit portion extending between upper chambers of two adjacent rams, and at least some of the fluid circuits including a second fluid circuit portion extending between  
10 lower chambers of the two adjacent rams.

13. A water craft as claimed in claim 12, wherein the water engaging means are disposed in a diamond shaped configuration relative to the chassis portion when viewed in plan and at least some of the fluid circuits include a third fluid circuit portion  
15 extending between a first fluid circuit portion of a first pair of adjacent rams and a second fluid circuit portion of an oppositely located pair of adjacent rams.

14. A water craft as claimed in claim 12, wherein the water engaging means are disposed in a rectangular shaped configuration relative to the chassis portion when  
20 viewed in plan and at least some of the fluid circuits include a third fluid circuit portion extending between a first fluid circuit portion of a first pair of adjacent rams disposed on a first lateral side of the water craft and a second fluid circuit portion of a diagonally oppositely located pair of adjacent rams disposed on a second lateral side of the water craft .

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15. A water craft as claimed in claim 12, wherein the water engaging means are  
-disposed in a rectangular shaped configuration relative to the chassis portion when viewed in plan and at least some of the fluid circuits include a third fluid circuit portion extending between a first fluid circuit portion of a first pair of adjacent rams disposed on  
30 a first lateral side of the water craft and a second fluid circuit portion of a transversely oppositely located pair of adjacent rams disposed on a second lateral side of the water craft .

16. A water craft as claimed in claim 12, further including at least one accumulator in fluid communication with at least one of the fluid circuits, each accumulator being arranged to absorb rapid movements of at least one of the water engaging means during  
5 use.

17. A water craft as claimed in claim 12, further including at least one damper valve.

18. A water craft as claimed in claim 17, wherein at least one damper valve is a  
10 controllable damper valve arranged to provide an adjustable level of damping.

19. A water craft as claimed in claim 18, wherein the controllable damper valve is arranged such that fluid flow through a fluid circuit during use effects relative movement between a magnetic member and a coil and thereby generation of an  
15 electrical current, the degree of damping provided by the controllable damper valve being proportional to the magnitude of electrical power drawn from the coil.

20. A water craft as claimed in claim 19, wherein the controllable damper valve includes a gear motor in circuit with a fluid circuit, the gear motor being arranged to  
20 turn when fluid flows in the fluid circuit, and a generator having a rotor caused to rotate when the gear motor rotates and to thereby generate an electrical current.

21. A water craft as claimed in claim 19, wherein the controllable damper valve includes a piston portion and a cylinder portion, one of the piston portion and the  
25 cylinder portion being arranged to generate a magnetic field and the other of the piston portion and the cylinder portion including a coil, the piston portion being arranged to move relative to the cylinder portion when fluid flows in the fluid circuit so as to thereby generate an electrical current in the coil.

30 22. A water craft as claimed in claim 1, further including means for controlling the orientation of the water engaging means relative to the average plane of the water surface.

23. A water craft as claimed in claim 22, wherein the means for controlling the orientation of the water engaging means includes at least one control ram.
- 5 24. A water craft as claimed in claim 23, wherein the means for controlling the orientation of the water engaging means includes at least one sensor arranged to sense a parameter associated with operation of the water craft and to cause expansion or contraction of at least one control ram in response to the at least one sensor.
- 10 25. A water craft as claimed in claim 24, wherein the parameter associated with operation of the water craft is lateral force, pitch force, yaw force, or steering position.
26. A water craft as claimed in claim 1, wherein at least one of the water engaging means is connected to the chassis portion using a double wishbone.
- 15 27. A water craft as claimed in claim 1, wherein at least one of the water engaging means includes an underside surface arranged to contact the water surface during use, the underside surface being contoured so as to restrict side slippage of the water craft during use.
- 20 28. A water craft as claimed in claim 1, wherein the water craft includes six water engaging means.
29. A water craft as claimed in claim 28, wherein the water engaging means are  
25 disposed in a rectangular configuration such that three water engaging means are disposed on a left side of the water craft and three water engaging means are disposed on a right side of the water craft.
30. A water craft as claimed in claim 1, further including at least one damping  
30 means arranged to absorb energy from motions of at least one water engaging means relative to the chassis.

31. A water craft as claimed in claim 30, wherein each damping means is associated with a water engaging means and each damping means includes a first damping member and a second damping member arranged to move relative to the first damping member when the water engaging means moves relative to the chassis, the damping means being  
5 arranged such that relative movement between the first damping member and the second damping member effects relative movement between a magnetic member and a coil and thereby generation of an electrical current, the degree of damping provided by the controllable damper valve being proportional to the magnitude of electrical power drawn from the coil.

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32. A water craft as claimed in claim 30, wherein the damping means includes a piston portion and a cylinder portion, one of the piston portion and the cylinder portion being arranged to generate a magnetic field and the other of the piston portion and the cylinder portion including a coil, the piston portion being arranged to move relative to  
15 the cylinder portion when a water engaging means moves relative to the chassis portion so as to thereby generate an electrical current in the coil.

33. A water craft as claimed in claim 30, wherein the damping means includes a fluid pump and a fluid storage device, the fluid pump being arranged to transfer fluid to  
20 the fluid storage device when a water engaging means moves relative to the chassis portion.

34. A water craft as claimed in claim 30, further including energy storage means arranged to store at least a portion of the energy absorbed by the damping means.

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35. A water craft as claimed in claim 34, wherein the energy storage means includes a battery.

36. A water craft including a chassis portion, a plurality of water engaging means, and at least one damping means, wherein each damping means is associated with a  
30 water engaging means and each damping means includes a first damping member and a second damping member arranged to move relative to the first damping member when

the water engaging means moves relative to the chassis, the damping means being arranged such that relative movement between the first damping member and the second damping member causes absorption of energy from motions of at least one water engaging means relative to the chassis portion.